# A Series
# High-Performance Low Loss Phase Stable Flexible Cable

01

## INTRODUCTION

A Series adopts strict production process and control requirements, so that the product has excellent electrical and mechanical performance within its working frequency range;
In terms of electrical performance, the signal transmission rate of this series can reach 83%, which makes the cable signal loss as low as possible and the temperature phase stability is less than 550PPM;
In terms of mechanical performance, the strict production technology ensures excellent bending performance;
In terms of environmental adaptability, the use of excellent production materials ensures the product used in a wide temperature range and has corrosion resistance, cracking resistance, moisture-proof, mildew-proof and fire resistance characteristics.

### Typical Application

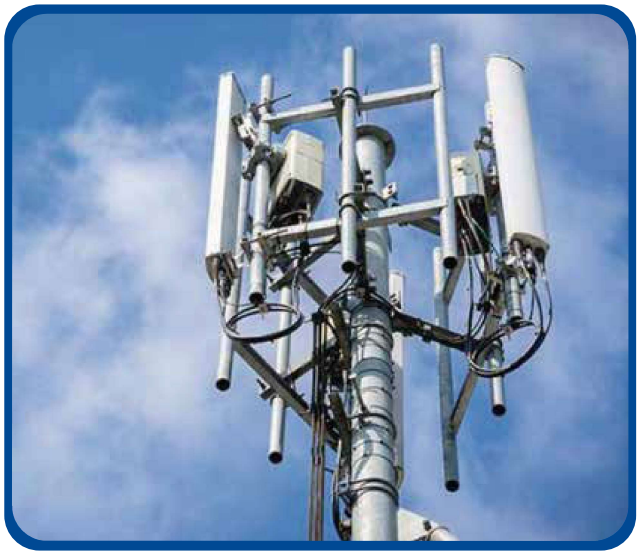
- Test cables
- Radar
- Aerospace systems
- Millimeter wave 5G communication
- Lab test

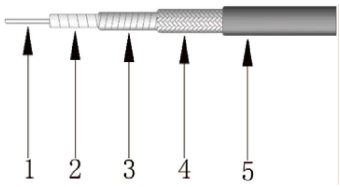
### Features

- Operating frequency up to 110GHz
- Extra-low loss
- High power
- High temperature resistance
- Good shielding

## Replacement Table

| Talent Model | Replacement Model | Replacement Brand |
|---|---|---|
| A15 | CXN3657 | GORE |
| A22 | CXN3506 | GORE |
| A40 | CXN3507 | GORE |
| | UFB142 | MCC |
| A48 | CXN3449 | GORE |
| A50 | UFB205A | MCC |
| A75 | CXN3450 | GORE |
| A81 | UFB311A | MCC |





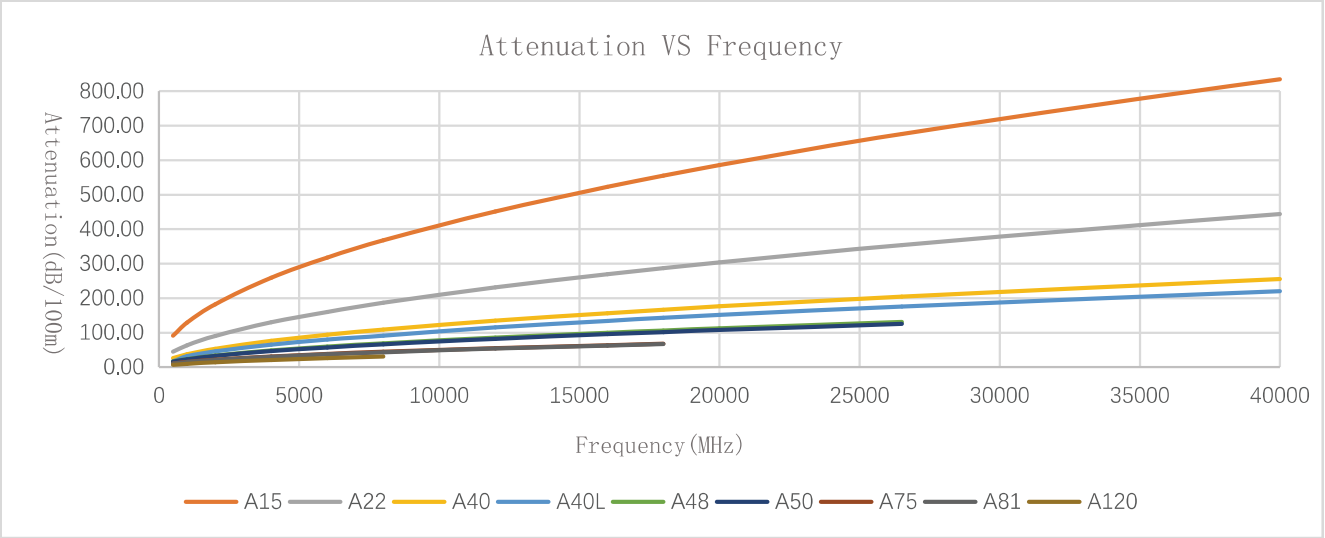

1-Center Conductor——SPC
2-Dielectric——PTFE
3-Inner Shield——SPC
4-Outer Shield——SPC
5-Jacket——FEP

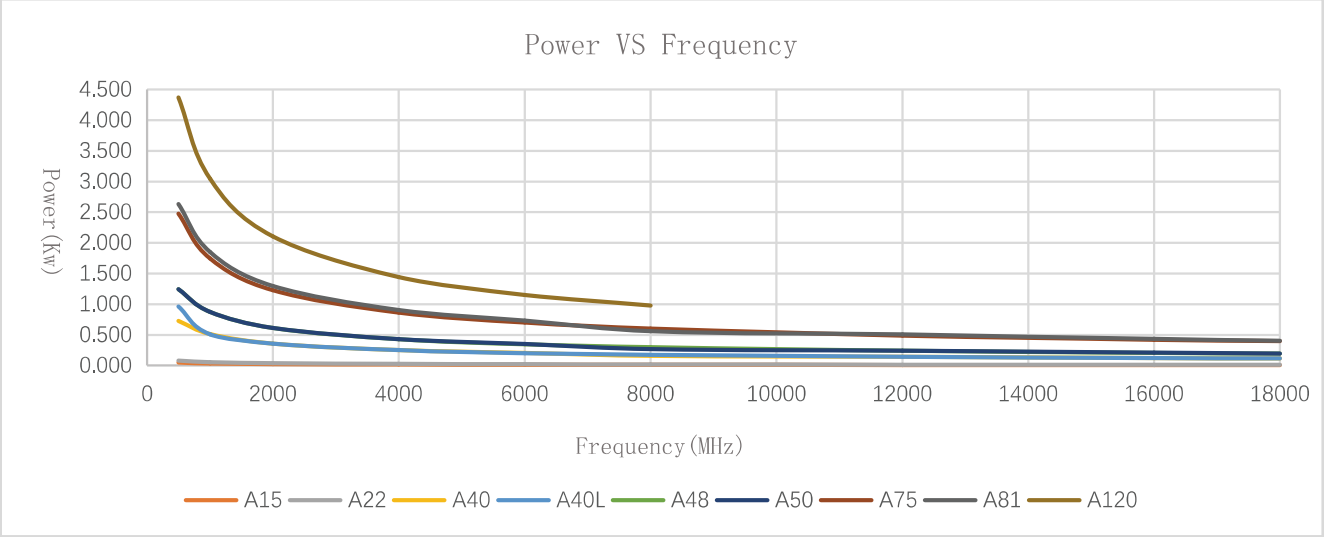
## CABLE SPECIFICATION

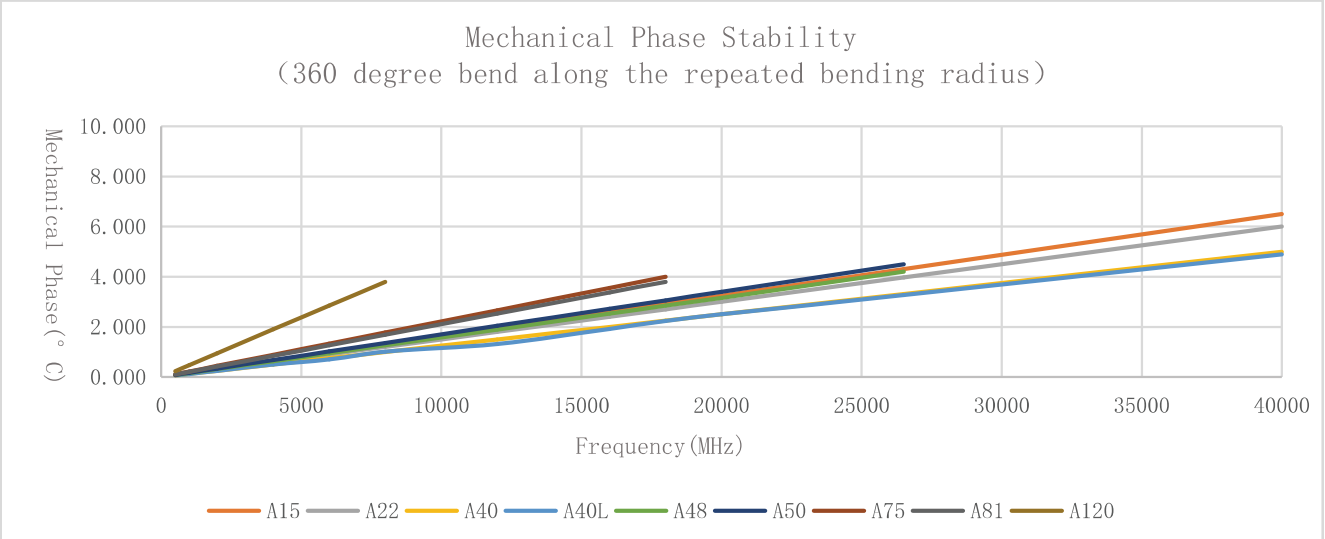
| Model | A15 | | A22 | | A40L | | A40 | | A48 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mechanical Specifications | | | | | | | | | | |
| Center Conductor | 0.29 | | 0.51 | | 1.02 | | 0.91 | | 1.4 | |
| Dielectric | 0.85 | | 1.38 | | 3.0 | | 2.45 | | 3.75 | |
| Inner Shield | 1.01 | | 1.58 | | 3.1 | | 2.66 | | 3.95 | |
| Outer Shield | 1. 24 | | 1.9 | | 3.35 | | 3.15 | | 4.35 | |
| Jacket | 1. 56 | | 2.2 | | 3.7 | | 3.6 | | 4.8 | |
| Electrical Specifications | | | | | | | | | | |
| Impedance(Ω) | 50 | | 50 | | 50 | | 50 | | 50 | |
| Velocity of Propagation(%) | 80 | | 82 | | 83 | | 83 | | 83 | |
| Shielding Effectiveness (dB) | < -90 | | < -90 | | < -90 | | < -90 | | < -90 | |
| Time Delay（ns/m） | 4.16 | | 4.06 | | 4.06 | | 4.01 | | 4.01 | |
| Capacitance（pF/m） | 81.7 | | 83 | | 79.8 | | 79.8 | | 81.9 | |
| Cut-off Frequency(GHz) | 135 | | 83 | | 46 | | 46 | | 31 | |
| Voltage Withstand(V,DC) | 200 | | 350 | | 650 | | 650 | | 1000 | |
| Static Bending Radius (mm) | 7 | | 11 | | 18 | | 18 | | 24 | |
| Dynamic Bending Radius (mm) | 15 | | 22 | | 36 | | 36 | | 48 | |
| Operating Temperature (℃) | -55~125 | | -55~125 | | -55~165 | | -55~125 | | -55~125 | |
| Attenuation(+25°C Ambient)&Power Handling(+40°C Ambient;SeaLevel;VSWR 1:1) | | | | | | | | | | |
| Frequency（MHz） | dB/100m | KW | dB/100m | KW | dB/100m | KW | dB/100m | KW | dB/100m | KW |
| 500 | 91.06 | 0.047 | 44.79 | 0.079 | 16.75 | 0.960 | 26.40 | 0.726 | 16.65 | 1.243 |
| 1000 | 128.94 | 0.033 | 63.70 | 0.055 | 31.91 | 0.511 | 37.50 | 0.511 | 23.67 | 0.874 |
| 2000 | 182.69 | 0.024 | 90.80 | 0.039 | 45.45 | 0.359 | 53.36 | 0.359 | 33.73 | 0.613 |
| 4000 | 259.04 | 0.017 | 129.85 | 0.027 | 64.93 | 0.251 | 76.10 | 0.252 | 48.22 | 0.429 |
| 6000 | 317.89 | 0.014 | 160.37 | 0.022 | 80.13 | 0.203 | 93.81 | 0.204 | 59.54 | 0.347 |
| 8000 | 367.69 | 0.012 | 186.49 | 0.019 | 91.15 | 0.176 | 108.91 | 0.157 | 69.22 | 0.299 |
| 12000 | 451.59 | 0.010 | 231.09 | 0.015 | 115.28 | 0.142 | 134.60 | 0.142 | 85.75 | 0.241 |
| 16000 | 522.69 | 0.008 | 269.46 | 0.013 | 134.30 | 0.122 | 156.60 | 0.122 | 99.96 | 0.207 |
| 18000 | 554.98 | 0.008 | 287.06 | 0.012 | 143.02 | 0.115 | 166.67 | 0.115 | 106.48 | 0.194 |
| 20000 | 585.60 | 0.007 | 303.84 | 0.012 | 151.31 | 0.110 | 176.25 | 0.109 | 112.69 | 0.184 |
| 26500 | 676.07 | 0.006 | 354.00 | 0.010 | 176.12 | 0.093 | 204.79 | 0.094 | 131.24 | 0.158 |
| 40000 | 834.90 | 0.005 | 444.01 | 0.008 | 220.51 | 0.074 | 255.69 | 0.075 | | |
| 50000 | 936.48 | 0.005 | 502.86 | 0.007 | | | | | | |
| 67000 | 1089.31 | 0.004 | 593.24 | 0.006 | | | | | | |
| 110000 | 1409.66 | 0.003 | | | | | | | | |
| K1 | 4.0594 | | 1.975832 | | 0.991550 | | 1.16847 | | 0.734593 | |
| K2 | 0.0005755 | | 0.001221 | | 0.000555 | | 0.00055 | | 0.00044 | |

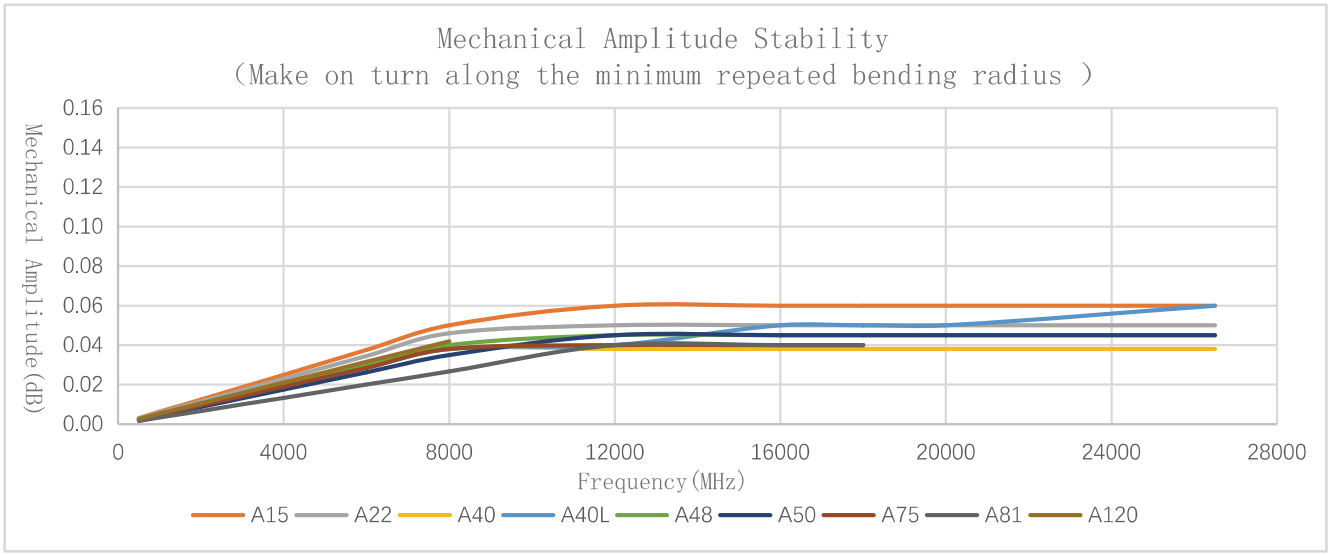
| Mode | A50 | | A75 | | A81 | | A120 | |
|---|---|---|---|---|---|---|---|---|
| **Mechanical Specifications** | | | | | | | | |
| Center Conductor | 1.45 | | 2.1 | | 2.3 | | 3.80 | |
| Dielectric | 4 | | 5.75 | | 6.25 | | 10.40 | |
| Inner Shield | 4.2 | | 6.07 | | 6.57 | | 10.78 | |
| Outer Shield | 4.7 | | 6.58 | | 7.15 | | 11.35 | |
| Jacket | 5.1 | | 7.50 | | 7.80 | | 12.00 | |
| **Electrical Specifications** | | | | | | | | |
| Impedance(Ω) | 50 | | 50 | | 50 | | 50 | |
| Velocity of Propagation(%) | 83 | | 83 | | 83 | | 83 | |
| Shielding Effectiveness(dB) | < -90 | | < -90 | | < -90 | | < -90 | |
| Time Delay（ns/m) | 4.01 | | 4.01 | | 4.01 | | 4.01 | |
| Capacitance（pF/m) | 79.5 | | 80.1 | | 80.1 | | 80.1 | |
| Cut-off Frequency(GHz) | 29 | | 20 | | 18 | | 11 | |
| Voltage Withstand(V,DC) | 1100 | | 1600 | | 1700 | | 2900 | |
| Static Bending Radius (mm) | 26 | | 38 | | 39 | | 60 | |
| Dynamic Bending Radius (mm) | 51 | | 75 | | 78 | | 120 | |
| Operating Temperature (℃) | -55~125 | | -55~125 | | -55~125 | | -55~125 | |
| **Attenuation(+25°C Ambient)&Power Handling(+40°C Ambient;SeaLevel;VSWR 1:1)** | | | | | | | | |
| Frequency（MHz) | dB/100m | KW | dB/100m | KW | dB/100m | KW | dB/100m | KW |
| 500 | 16.17 | 1.243 | 10.88 | 2.474 | 10.37 | 2.633 | 6.94 | 4.372 |
| 1000 | 22.96 | 0.875 | 15.43 | 1.744 | 14.76 | 1.850 | 9.98 | 3.043 |
| 2000 | 32.66 | 0.615 | 21.93 | 1.227 | 21.07 | 1.296 | 14.42 | 2.105 |
| 4000 | 46.58 | 0.431 | 31.21 | 0.862 | 30.18 | 0.905 | 21.02 | 1.444 |
| 6000 | 57.40 | 0.350 | 38.42 | 0.700 | 37.32 | 0.732 | 26.34 | 1.153 |
| 8000 | 66.66 | 0.268 | 44.55 | 0.604 | 43.44 | 0.558 | 30.98 | 0.980 |
| 12000 | 82.34 | 0.244 | 54.94 | 0.490 | 53.93 | 0.506 | | |
| 16000 | 95.78 | 0.210 | 63.81 | 0.422 | 62.98 | 0.434 | | |
| 18000 | 101.92 | 0.197 | 67.86 | 0.397 | 67.13 | 0.407 | | |
| 20000 | 107.77 | 0.186 | | | | | | |
| 26500 | 125.20 | 0.161 | | | | | | |
| K1 | 0.715987 | | 0.48249 | | 0.45638 | | 0.298565 | |
| K2 | 0.000328 | | 0.000174 | | 0.000328 | | 0.000535 | |

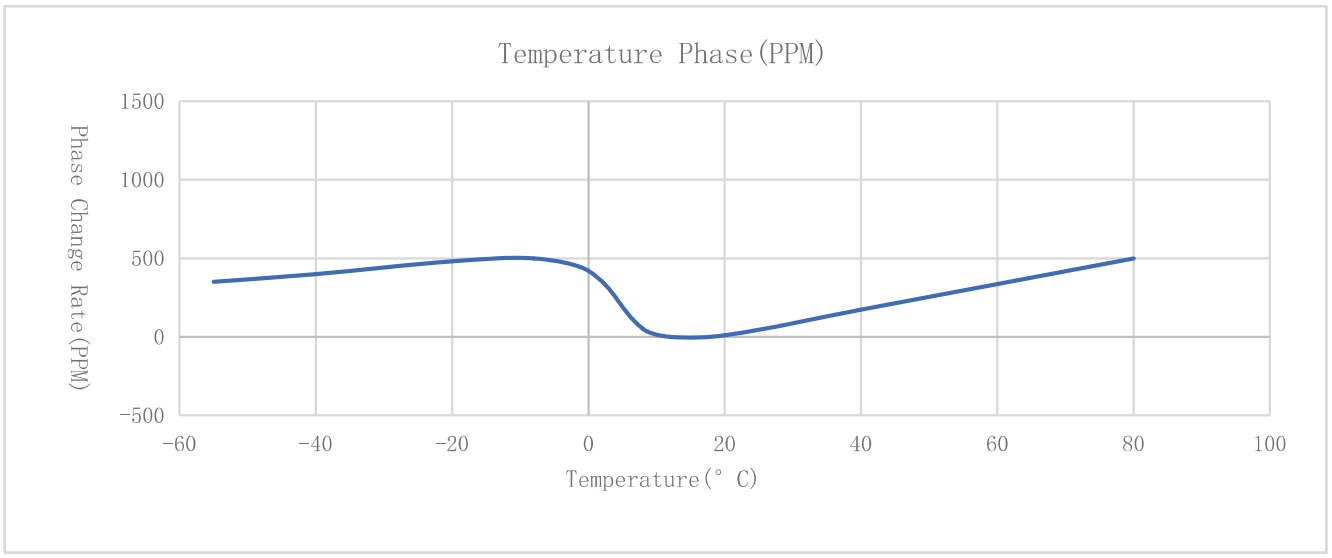
## Test Data


Attenuation VS Frequency
Attenuation(dB/100m)
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
0
5000
10000
15000
20000
25000
30000
35000
40000
Frequency(MHz)
A15 A22 A40 A40L A48 A50 A75 A81 A120

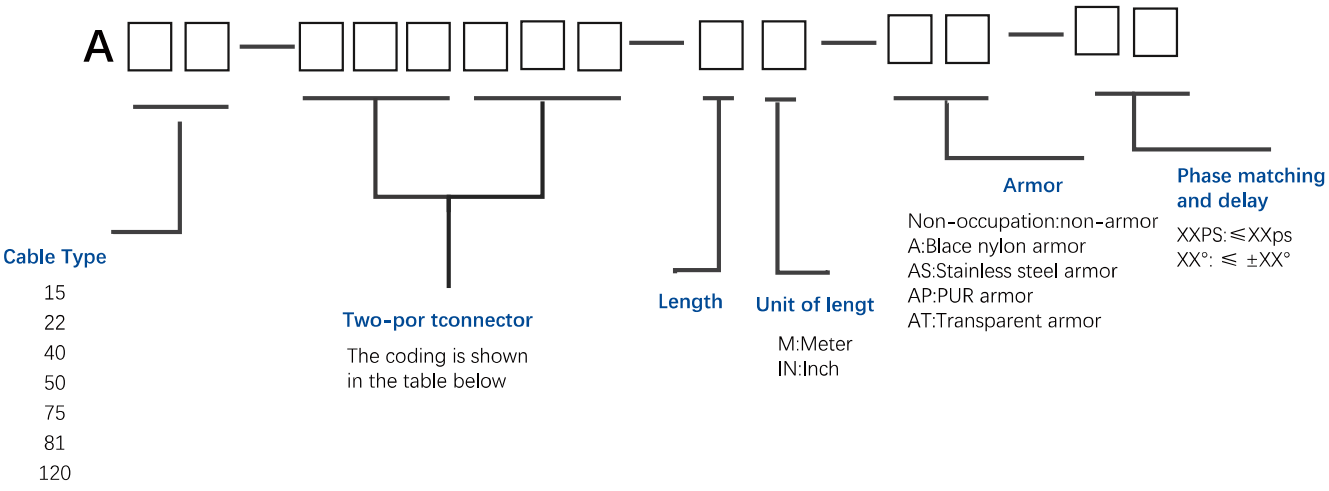

Power VS Frequency
Power(Kw)
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
Frequency(MHz)
A15 A22 A40 A40L A48 A50 A75 A81 A120


Mechanical Phase Stability
(360 degree bend along the repeated bending radius)
Mechanical Phase(° C)
10.000
8.000
6.000
4.000
2.000
0.000
0
5000
10000
15000
20000
25000
30000
35000
40000
Frequency(MHz)
A15 A22 A40 A40L A48 A50 A75 A81 A120


Mechanical Amplitude Stability
(Make on turn along the minimum repeated bending radius )
Mechanical Amplitude(dB)
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0
4000
8000
12000
16000
20000
24000
28000
Frequency(MHz)
A15 A22 A40 A40L A48 A50 A75 A81 A120


Temperature Phase(PPM)
Phase Change Rate(PPM)
1500
1000
500
0
-500
-60
-40
-20
0
20
40
60
80
100
Temperature(° C)

## Assembly Selection Information




## Optional Connectors

| Connector Code | Connector Type | Operating Frequency | A15 | A22 | A40L | A40 | A48 | A50 | A75 | A81 | A120 | VSWR (Max) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0M | 1.0mm Male | DC-110GHz | ● | | | | | | | | | 1.50 |
| 1.0F | 1.0mm Female | DC-110GHz | ● | | | | | | | | | 1.50 |
| 1.85M | 1.85mm Male | DC-67GHz | ● | ● | | | | | | | | 1.30 |
| 1.85F | 1.85mm Female | DC-67GHz | ● | ● | | | | | | | | 1.30 |
| 2.4M | 2.4mm Male | DC-50GHz | | ● | | ● | | | | | | 1.30 |
| 2.4F | 2.4mm Female | DC-50GHz | | ● | | ● | | | | | | 1.30 |
| 2.92M | 2.92mm Male | DC-40GHz | | ● | ● | ● | | | | | | 1.30 |
| 2.92WM | 2.92 Male Right Angle | DC-40GHz | | ● | ● | ● | | | | | | 1.30 |
| 2.92F | 2.92mm Female | DC-40GHz | | ● | ● | ● | | | | | | 1.30 |
| 3.5M | 3.5mm Male | DC-27GHz | | | | | ● | ● | | | | 1.30 |
| 3.5F | 3.5mm Female | DC-27GHz | | | | | ● | ● | | | | 1.30 |
| SMPF | SMP Female | DC-40GHz | | ● | | | | | | | | 1.30 |
| SSMAM | SSMA Male | DC-40GHz | | ● | | | | | | | | 1.30 |
| SMAM | SMA Male | DC-27GHz | | ● | | ● | ● | ● | ● | ● | | 1.25 |
| SMAWM | SMA Male Right Angle | DC-18GHz | | | | | ● | ● | ● | ● | | 1.25 |
| SMAF | SMA Female | DC-27GHz | | ● | | ● | ● | ● | ● | ● | | 1.25 |
| NM | N Male | DC-18GHz | | | | ● | | | ● | ● | ● | 1.25 |
| NF | N Female | DC-18GHz | | | | ● | | | ● | ● | ● | 1.25 |
| TNCM | TNC Male | DC-12GHz | | | | | | | | ● | | 1.25 |
| SCM | SC Male | DC-6GHz | | | | | | | | ● | | 1.25 |
| DINM | 7/16 Male | DC-6GHZ | | | | | | | | ● | ● | 1.25 |